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THE DEPARTMENT OF AGRICULTURE.

THE provisions reorganizing certain divisions of the Department of Agriculture which, as we noted last week, were omitted from the appropriation bill as it passed the House have been reinserted by the Senate. The four bureaus provided and the staffs, as the bill now stands, are as follows:

Bureau of Plant Industry.—One plant physiologist and pathologist, who shall be chief of bureau, \$3,000; 1 plant pathologist, \$2,500; 1 botanist, \$2,500; 1 pomologist, \$2,500; 1 agrostologist, \$2,500; 1 assistant pathologist, \$1,800; 1 assistant botanist, \$1,800; 1 assistant pomologist, \$1,800; 1 assistant agrostologist, \$1,800; 2 clerks, class 3, \$3,200; 3 clerks, class 2, \$4,200; 3 clerks, class 1, \$3,600; 5 clerks at \$1,000 each; \$5,000; 2 clerks at \$900 each, \$1,800; 2 clerks at \$840 each, \$1,680 in all, \$39,680.

Bureau of Forestry.—One forester who shall be chief of bureau, \$3,000; 1 assistant forester, \$2,500; 1 assistant forester, \$1,800; 1 assistant forester, \$2,000; 1 chief clerk, \$1,800; 1 stenographer, \$1,200; 1 field assistant, \$1,500; 1 field assistant, \$1,400; 1 field assistant, \$1,200; 1 field assistant, \$1,000; 1 field assistant, \$720; 10 collaborators at \$300 each, \$3,000; 1 clerk class 3, \$1,600; 1 photographer, \$1,200; 1 computer, \$1,000; 3 clerks, class 1, \$3,600; 2 clerks at \$1,000 each, \$2,000; 4 clerks at \$900 each, \$3,600; 7 clerks at \$720 each, \$5,040; in all, \$39,160.

Bureau of Chemistry.—One chemist, who shall be chief of bureau, \$3,000; 1 assistant chemist, \$2,500; 1 assistant chemist, \$1,800; 1 assistant chemist, \$1,600; 2 clerks, class 1, \$2,400; in all, \$11,300.

Bureau of Soils.—One soil physicist who shall be chief of bureau, \$3,000; 1 scientist, \$2,500; 1 scientist, \$1,800; 1 scientist, \$1,000; 1 chief clerk, \$2,000; 1 stenographer, \$1,200; 3 clerks, class 1, \$3,600; 1 clerk, \$1,000; 1 clerk, \$840, 1 watchman, \$720; 1 charwoman, \$480; in all, \$18,140.

SCIENTIFIC NOTES AND NEWS.

THE gold medal of the Royal Astronomical Society has been awarded to Professor E. C. Pickering, director of the Harvard College Observatory.

THE Amsterdam Society for the Advancement of Natural Science and Medicine has awarded its gold Swammerdam medal for 1900 to Professor Gegenbaur, of Heidelberg. The medal was established in 1880, and is awarded

once in ten years for researches in the biological sciences, having hitherto been conferred on Professor C. Th. von Siebold and Professor Ernst Haeckel.

PROFESSOR E. A. SCHÄFER, of the University of Edinburgh, was presented, on January 30th, with a testimonial by his former pupils at University College, London. The presentation took the form of silver plate and a sum of money to be used for the foundation of a Schäfer physiological research medal.

PROFESSOR MATHIAS DUVAL, of the École de Médecine at Paris, who has been obliged by the condition of his eyes to forego work for two years, has undergone a successful operation. We understand that he will now be able to resume his important embryological researches, which have already given him a foremost place among the embryologists of the world.

AT a meeting of the trustees of the American Museum of Natural History, held on February 11th, the formal announcement was made of the gift to the Museum by Mr. J. Pierpont Morgan of the Tiffany collection of gems and of the famous Bement collection of minerals. Another very important gift is the ethnological collection brought together for the past twenty-five years by Andrew Ellicott Douglas. Mr. William E. Dodge was elected first vice-president of the Museum. Professor Henry F. Osborn was elected a trustee and second vice-president.

PROFESSOR J. PLAYFAIR McMURRICH, of the Medical Department of the University of Michigan, has been asked by the Government of the Netherlands to take charge of, and make a report on, a collection of actinians secured from the neighborhood of the Malay Archipelago. The collection includes specimens from along the shore and from the deep sea.

PROFESSOR WILLIAM DEWITT ALEXANDER, head of the survey department of Hawaii, has resigned to accept a position on the United States Coast and Geodetic Survey. He will have charge of that branch of the department which has to deal with Hawaii and Samoa.

DR. JOHN S. BILLINGS, JR., has resigned his position of instructor in clinical microscopy in the University and Bellevue Hospital Medical College, New York, and has become assistant

director of the Bacteriological Laboratory of the Department of Health.

COLONEL PETER SMITH MICHIE, professor of natural and experimental philosophy at the West Point Military Academy, died on February 16th, of pneumonia. He was born in Scotland in 1839, graduated from West Point in 1863, and has been professor there since 1871. He was the author of a number of scientific and other works, including 'Elements of Wave Motion relating to Sound and Light,' 'Elements of Analytical Mechanics,' 'Elements of Hydro-Mechanics' and 'Practical Astronomy.'

DR. J. H. LINSLEY, director of the Vermont Laboratory of Hygiene, died on February 17th at the age of forty-one years.

THE expedition sent by the U. S. Naval Observatory to observe the eclipse of May 17th was expected to leave San Francisco for Manila on February 16th. From Manila it will be transported to Sumatra by a U. S. warship, and headquarters will be established at Padang about a month before the occurrence of the eclipse. The party includes Professor Skinner, of the U. S. Naval Observatory; Professor Barnard, of the Yerkes Observatory; Dr. Mitchell, of Columbia University; Dr. Humphreys, of the University of Virginia, and Mr. Jewell, of the Johns Hopkins University.

IT is reported in the *N. Y. Evening Post* that Mr. Marshall A. Saville, of the American Museum of Natural History, has made important discoveries in the ruins of the Palace of Mitla, in the state of Oaxaca, Mexico, his excavations having disclosed a number of chambers under the palace.

THROUGH the efforts of Mrs. William Bouton, the St. Louis Academy of Science has secured a fine collection of native and foreign butterflies.

MR. J. STANLEY-GARDINER, M.A., fellow of Gonville and Caius College, Cambridge, has presented the university with a collection of ethnological objects from the Maldiv Islands and Minikoi Island.

THE Medical Department of the University of Buffalo is in receipt of a gift of \$50,000 for the purpose of erecting a laboratory to be devoted

to research work and to be known as the Gratwick Research Laboratory.

WE learn from foreign exchanges that at a recent conference of German biologists, held at Berlin, a resolution was passed calling the attention of the Imperial Government to the importance of establishing five floating stations on the Rhine for the purpose of biological investigation. Great stress was laid on the practical advantages which pisciculture would derive from these establishments, and it was resolved that if the Government failed to provide the necessary funds, an appeal should be made to the States of Baden, Bavaria, Alsace-Lorraine, Hesse and Prussia.

PROFESSOR J. A. FLEMING reports that Mr. Marconi has succeeded in sending wireless messages between St. Catharine's, Isle of Wight, and the Lizard, a distance of two hundred miles.

THE Portuguese Government is sending a commission to the Portuguese possessions in West Africa to study the sleeping sickness which occurs there.

IT appears that the plague is increasing in Bombay, about 1,000 deaths having occurred during the last week of which reports are at hand.

IT is proposed to hold an Industrial and Polytechnic Exhibition in Birmingham during the coming summer, with the object of raising funds to endow scholarships at the University for the benefit of the children of the working classes.

THE inauguration of the work of the British National Physical Laboratory has been delayed by the opposition to the site at Richmond first proposed and by the alterations required in Bushy House, the building finally granted for the laboratory. The report of the executive committee for 1900, of which an abstract is given in *Nature*, describes the building and the alterations that are in progress. Bushy House itself will be used for the more delicate physical measurements; for the engineering work a new building, 80 by 50 feet in area, will be constructed. The work in prospect for the laboratory includes the connection between a magnetic quality and the physical, chemical and electrical

properties of iron and its alloys, with a view specially to the determination of the conditions for low hysteresis and non-agency; the testing of steam gauges, indicator springs and the like, for which a mercury pressure gauge will be provided; standard screw-gauges; electrical standards, and optical, thermometric and photographic tests.

WE learn from the London *Times* that, by his will, Mr. Philip Crowley, F.L.S., F.Z.S., of Croydon, who died on December 20th last, and whose collections of birds' eggs and of exotic butterflies are among the largest known to exist, bequeathed to the Trustees of the British Museum, from his natural history collections, whether of eggs or insects or other objects, all up to four species, and of eggs, if in clutches, four clutches, and if there should be more than four specimens in his collection to allow them to take half the extra, and should any species be useful or interesting by reason of variety or locality to allow them to take the whole series if they should think fit so to do—his idea being that what was really useful and wanted they might have, but that they should not take simple duplicates.

PENNSYLVANIA is a good second to New York in the forestry movement. Already it has secured 150,000 acres for its State forestry reservations. It will probably have 500,000 acres before the year ends, and looks forward to the acquisition of 1,500,000 or 2,000,000 acres. Its State College is now preparing to begin teaching practical forestry, and a bill has just passed the second reading in the House of Representatives which provides for the creation of a State Department of Forestry which shall be of equal importance with any other department of the Government. For years a campaign of education has been conducted in that State on very liberal lines, and it is largely to this that the popularity of forestry in Pennsylvania is due.

SANITARY science has scored two points of advantage during the month of January in two decisions of the New York Supreme Court, which make the pollution of streams by municipal corporations and private concerns actionable. Judge Houghton in General Term has granted an injunction against the city of

Gloversvill for discharging its sewage into the Cayadutta creek, a tributary of Mohawk river. The Appellate Division has also affirmed the decision of Judge Stover in General Term, granting an indemnity against the Geo. West Paper Co., of Ballston, N. Y., for the pollution of the Kayaderosseras creek, a tributary of the Hudson river. Both suits were brought by private riparian owners, the former in spite of a bill passed by the New York Legislature of 1900, giving the city of Gloversvill the right of disposal now denied it by the Court.

A LAW has recently been passed which permits the French Government to forbid the manufacture and sale of absinthe and certain other fabricated articles of drink, recognized and declared to be dangerous by the Academy of Medicine. The Chamber has now voted to request the Academy to indicate those drinks which contain substances dangerous to the public health, so that their manufacture and sale may be prohibited.

THE Right Honorable R. W. Hanbury M.P., President of the Board of Agriculture, has appointed a committee for the purpose of conducting experimental investigations with regard to the communicability of glanders under certain conditions, and as to the arresting and curative powers, if any, of mallein when repeatedly administered. The committee will consist of Mr. A. C. Cope, chief veterinary officer of the Board of Agriculture (chairman); Professor J. McFadyean, principal of the Royal Veterinary College; Mr. William Hunting, one of the veterinary inspectors of the London County Council; Mr. J. McIntosh McCall, assistant veterinary officer of the Board of Agriculture; Mr. H. A. Berry, of the Board of Agriculture, will act as the secretary to the committee.

BEFORE the Pan-American Medical Congress, which met recently at Havana, the board which has been engaged in the investigation of yellow fever, consisting of Drs. Reed, Carroll and Agramonte, made a report. According to despatches to the daily papers, it was stated that two of the main conclusions were that the specific cause of the disease is unknown, and that it can be carried only by mosquitoes. Conse

quently the disinfection of clothing and houses is useless. The fever can be produced by a subcutaneous injection of blood from a patient who must have had the disease for not more than two days. Mosquitoes must also bite the patient during the first two days of his illness or they cannot transmit the disease. The board kept an infected mosquito for fifty-one days, when it was allowed to bite a person who contracted the disease. The board differs from Dr. Finlay in that the latter holds that more than one kind of mosquito can convey yellow fever. The board says there is only one kind that can do so. Dr. Finlay also says that a mosquito can transmit the disease the fourth or fifth day after biting a patient, while the board says that twelve days must intervene. The board reported that non-immunes were allowed to sleep in infected clothing and bedding, but none contracted the disease. A member of the Congress objected that these so-called non-immunes might really have been immunes. The board replied that two of these were subsequently subjected to the bites of infected mosquitoes and contracted the disease. The moral aspect of the experiments was touched upon. It was pointed out that members of the board were themselves bitten and one of them died. Yellow fever is not due to dirt. It may occur in the cleanest localities. Dr. Wilde of the Argentine Republic proposed the creation of an international yellow fever board to study means of exterminating the disease.

THE Illinois Society of Engineers and Surveyors held its sixteenth annual meeting at Bloomington on January 23d-25th.

AT a meeting in San Francisco a committee of fifteen was authorized for the preparation of plans for a Pacific Coast Medical Association.

A CONFERENCE of science masters in public schools was held recently in the rooms of the University of London, at South Kensington, with Sir Henry Roscoe in the chair and about fifty members in attendance. The subjects discussed included the order of science teaching, the coordination of the teaching of science and mathematics, natural history societies, and science and examinations.

The Council of the St. Louis Academy of

Science announces that it has arranged for a series of addresses on the progress made in the several departments of pure and applied science during the nineteenth century. These addresses, to which the public is welcome, are given at the Academy Rooms, 1600 Locust street, at the second stated meeting of each month, at 8 P. M. Subject to revision due to unforeseen causes, the following program is announced for these meetings:

January 21st, Rev. M. S. Brennan, 'Astronomy.'
February 18th, Professor J. L. Van Ornum, 'Engineering.'
March 18th, Dr. E. H. Keiser, 'Chemistry.'
April 15th, Mr. C. F. Marbut, 'Geology.'
May 20th, Professor George Lefevre, 'Zoology.'
October 21st, Professor F. E. Nipher, 'Physics.'
November 18th, Mr. Herbert F. Roberts, 'Botany.'
December 16th, Mr. F. Louis Soldan, 'Education.'

THE public lectures under the auspices of the department of zoology of Columbia University are being given this year by Dr. Gary N. Calkins, the dates and titles being:

February 15—'The Simplest of Living Animals. General Sketch.'
February 19—'The Sarcodae Animals; Naked bits of Protoplasm.'
February 26—'The Flagellated Organisms, the Most Important Group, theoretically, of the Protozoa.'
March 1—'The Malarial Germ and other Sporozoa.'
March 5—'Infusoria, the Highest Type of Protozoa.'
March 8—'The Loss of Vitality in Protozoa and its Renewal through Conjugation.'
March 12—'The Protozoon, a Physiological Machine.'

PROFESSOR NIPHER, of Washington University, is still making progress in his photographic work. If his pictures are unsatisfactory on first development, he destroys the picture chemically and starts again with a clean film. If the picture is started as a negative in the dark room and is unsatisfactory, he first dissolves the picture with the fog on the plate, then a fresh picture is developed on the same film. This picture may be a negative in the dark room, or it may be a positive, if the development takes place in the light. In a similar way, if the first picture is a positive, the second picture may be either a positive or a negative, according as the second development is in the light or in the dark room. There is a great advantage in start-

ing the secondary treatment with a clear film. A picture started as a negative may be reversed by turning on the light, but the high lights are already dark and the shadows must then become dark in contrast with them. The whole picture will then be very dark. By this new process the second picture may be as perfect as if the original treatment had been properly started.

THE directory of the Washington Academy of Sciences and affiliated societies for 1901, compiled by Dr. Marcus Baker, and corrected to about January 10th, has been distributed to members. The membership of the societies, excluding corresponding members in some cases, is 2,557 and the number of persons 2,013. The membership is distributed among the different societies as follows :

Academy of Sciences	291
Anthropological Society.....	125
Biological Society.....	171
Chemical Society.	121
Entomological Society.....	52
National Geographic Society.....	1059
Geological Society.....	147
Columbia Historical Society.....	180
Medical Society.....	309
Philosophical Society.....	102

THE American Metrological Society has issued a circular, primarily for distribution among members of Congress, entitled 'A Few Reasons Why the Metric System of Weights and Measures should be Adopted in the United States.' It presents very clearly the great advantages of the metric system and should be widely circulated. Copies can probably be obtained from the president of the Society, President T. C. Mendenhall, Worcester, Mass., or the secretary, Professor J. H. Gore, Columbian University, Washington, D. C.

It is proposed in Dundee to erect a granite monument over the grave of James Bowman Lindsay, in the Western Cemetery of the city. *Nature* calls attention to the fact that Lindsay was a remarkable man, whose memory should not be permitted to fade. He was born in 1799, and taught electricity, magnetism and other subjects in Dundee for many years, dying there about forty years ago. In 1834 he foresaw that 'houses and towns will in a short time be lighted by electricity instead of gas, and ma-

chinery will be worked by it instead of steam.' This prediction was the result of his own observations of effects produced by the electric current, and not merely imaginative suggestions. In 1854 Lindsay transmitted telegraphic signals through water electrically ; and when the British Association visited Aberdeen in 1859, he demonstrated the success of his method by transmitting signals across the harbor. He also read a paper upon it, entitled, 'Telegraphing without wires.'

It is stated in the *Lancet* that, in consequence of a movement which was started two years ago, a salmon hatchery for the river Tweed has just been erected. The hatchery, which is fitted with all the modern improvements, is situated at East Learmouth, about a mile from Cornhill-on-Tweed, on an excellent site which has been granted by Earl Grey. The management of the hatchery is under the supervision of Mr. F. J. Douglas, Springwood Park, Kelso, and Mr. George Grey of Millfield. The hatchery is a private undertaking with which the River Tweed Commissioners have no official connection, and the cost of which has been subscribed to by every river proprietor from Torwoodlee to Tillmouth. The building is 48 feet long by 20 feet wide and seven feet high inside. It is fitted with 12 boxes capable of holding in all 18 grilles, so that the 12 boxes combined have a capacity for about 300,000 salmon ova. If the fry were hatched three times in a season the output would not fall far short of 1,000,000 salmon fry. The water supply is carefully filtered before passing into the boxes. There is in the hatchery an impounding tank of 1,100 gallons capacity for keeping the salmon in after capture until they are ready for spawning. The young fry will be kept until they are six months old. For this purpose six ponds are to be constructed 40 feet long by eight feet wide by four feet deep. There are those who think that fish-culture may play an important part from a medical point of view in the future.

THE Prussian Minister of Public Instruction has issued an order regulating experiments in hospitals which is quoted by the *London Times* as follows: "I hereby call the attention of those who have the management of clinical and

polyclinal hospitals and similar institutions to the fact that medical operations for any purposes save those of the diagnosis, cure, and prevention of disease are forbidden, even when otherwise permissible from the legal and moral point of view—(1) in the case of a person who is a minor or for other reasons is not entirely responsible; (2) in cases where the person in question has not explicitly given permission for the operation; (3) in cases where this permission has not been preceded by a proper statement of the injurious consequences which might possibly result from the operation. I likewise order that operations of this nature shall be undertaken only by the director of the institution himself or by his special authorization. Whenever such an operation is performed the register of the case must contain a statement that the above conditions have been fulfilled, and must also give a detailed account of the circumstances. The existing regulations affecting medical operations for the purposes of the diagnosis, cure, or prevention of disease are not affected by these instructions."

UNIVERSITY AND EDUCATIONAL NEWS.

By the will of the late Professor Edward Edridge Salisbury, Yale University will receive on the death of Mrs. Salisbury a certain part of the residue of the estate, the amount being estimated at \$150,000. One-half of the sum is to provide an additional income for the Salisbury professorship of Sanskrit and comparative philology, and the other half is to accumulate until it reaches \$100,000, when the income is to be used for such purpose as the trustees may determine.

By the will of the late J. A. Vanderpoel, Rutgers College will receive \$25,000 on the death of Mrs. Vanderpoel, the money to be used for scholarships in chemistry.

A BILL has been introduced at Albany providing for the establishment of a State electrical school at Schenectady, which would be a part of Union College. The bill appropriates \$150,000 for the establishment of the school and \$25,000 for maintenance. Union College is to offer 100 scholarships and the General Electrical Com-

pany is to give the use of its shops for observation and instruction.

A BILL has also been introduced at Albany appropriating \$100,000 for the establishment of a State Veterinary College for the eastern part of the State to be consolidated with the College of New York University.

THE Paris faculty of medicine has established a school for the study of tropical diseases, with special chairs of bacteriology and parasitology.

A MEMORIAL to the Secretary of State for India, begging for an inquiry into the recent dismissal of seven of the staff of Coopers Hill College, has been signed by Lord Kelvin, Lord Lister, Lord Rayleigh, Sir Frederick Abel, Sir Frederick Bramwell, Sir William Huggins, Sir Norman Lockyer, Sir Andrew Noble, Sir William Crookes, Sir Archibald Geikie, Sir Henry Roscoe, Professor Dewar, Professor J. J. Thomson, Professor Armstrong, Professor Marshall Ward, Professor Ewing, Mr. W. H. M. Christie, Mr. R. T. Glazebrook, Mr. W. N. Shaw, and by some seventy other Fellows of the Royal Society.

AT the Rush Medical College, University of Chicago, Dr. G. S. Lingle has been appointed professor of experimental physiology, and Dr. W. D. Zoethout laboratory professor of neurology.

It is reported that Professor Frank Thilly, of the University of Missouri, has been offered the chair of ethics at Leland Stanford Junior University.

AT the Massachusetts Institute of Technology the following promotions have been made: Dr. Henry Fay, assistant professor of analytical chemistry and metallography; Dr. James F. Norris, assistant professor of organic chemistry; Dr. F. H. Thorp, assistant professor of industrial chemistry, and Dr. W. R. Whitney, assistant professor of theoretical chemistry and proximate analysis. In the department of physics, Messrs. L. Derr, C. L. Norton and Dr. G. V. Wendell have been promoted to assistant professorships.

DR. F. SCHENCK, of Würzburg, is to succeed Kossel as professor of physiology at Marburg.